WILDLIFE MANAGEMENT UNIT 20 - SOUTHWEST DESERT

Boundary Description

> **Beaver, Iron and Millard counties** - Boundary begins at Highway US-50(6) and the Utah-Nevada state line; then east along US-50(6) to Highway SR-257; then south of SR-257 to Highway SR-21; then south on SR-21 to Highway SR-130; then south on SR-130 to Interstate 15; then south on I-15 to Highway SR-56; then west on SR-56 to the Lund Highway; then northwest along this highway to the Union Pacific railroad tracks at Lund; then south along this railway to the Utah-Nevada state line; then north along this state line to US-50(6) and beginning point.

Management Unit Description

The West Desert unit covers a large arid area along the Nevada border, although much of this is cold-desert valley bottoms and is not suitable habitat for mule deer. The Wah Wah, Needle, and San Francisco ranges provide approximately 937,449 acres of summer range for deer. However, most is lower quality summer range consisting of mountain brush types. There is little quality summer range due to the lack of aspen on these mountains. Winter range is estimated at 251,382 acres. Summer range for elk is estimated at only 68,239 acres with 123,046 acres of winter range. (DWR 1998). All three mountains run north and south with their drainages flowing to the east and west. With similar steep and rugged topography, the upper areas are quite susceptible to erosion of unprotected soils from high intensity summer storms. Gentle rolling slopes, foothills, and benches dominate below 7,500 feet. The elevation on the unit ranges from 4,700 feet at the hardpan in Wah Wah Valley to 9,790 feet at Indian Peak.

Most of the unit is administered by the BLM (>80%). The DWR manages the 10,240 acre Indian Peak Wildlife Management area and private interests control 5% of the deer and elk summer range and 4% and 8% of the deer and elk winter range. By far, the most prominent land use is livestock grazing. Cattle are grazed year-round in some areas and particularly the valley bottoms in winter. Additionally, pinyon nuts and Christmas trees are harvested and sold commercially. Mule deer are the dominant big game species, along with a herd of elk which is to be managed to achieve a population of 975 wintering animals. Pronghorn antelope are common in the valleys, while feral horses are present and overly abundant in localized areas north of Indian Peaks on the Needle Range.

The big game range was inventoried by Coles and Pederson (1970) in 1969. The whole area is considered only marginal deer habitat due to the lack of good summer range. The vegetal composition of nearly all of the area classified as deer range is typical of winter ranges throughout the state. Of the four vegetation types, Coles and Pederson (1970) recognized juniper-pinyon (*Pinus monophylla*) as the most prevalent, covering 74% of the deer range. Sagebrush was second, covering 19% of the range. The browse-shrub type and seeded areas cover 4% and 3% of the range respectively. The browse-shrub type is the most productive and in the most demand by both livestock and deer. Despite a scarcity of forbs which makes it poor summer range, most deer use the browse-shrub type extensively year-round. Rehabilitation projects, covering 21,882 acres of former pinyon-juniper range, have increased overall production. This has been due mostly to the establishment of healthy stands of seeded perennial grasses. Livestock and elk populations have benefitted most from these seeded areas. Deer may also have benefitted, but to a lesser extent due to the limited success of forb and browse establishment. The best seedings for deer have been in the Indian Peaks area where bitterbrush is common.

Herd Unit Management Objectives

The West Desert was all considered to be one herd unit prior to 1971 when it was split into three subunits

(62A, 62B and 62C). Deer numbers and thus harvests have always been relatively low in these units. Unit 62C was renumbered to Wildlife Management unit 20 in 1998. Either sex hunts were conducted in unit 20 between 1951 and 1973 with a maximum harvest of 617 deer in 1972. The average harvest for the buck only hunts between 1974 and 1984 was 133, with a low of 50 in 1975, and a high of 197 in 1984 (Jense et al 1985). Harvests have declined between 1991 and 1995 from 261 in 1991 to only 55 by 1995. To get a better idea of what kind of trend is taking place on this herd unit, a regression of deer harvest since 1950 is best to help explain the trend. This type of analysis indicates a continued downward trend that is 37% lower than what took place in 1950 (Jense et al. 1991). Poor fawning and summering areas contribute to typically low fawn production (usually well below 70 fawns/100 does) which inhibits the rate of increase. Fawn/doe ratios were estimated at only 14 in 1986-87 and 45 in 1988-89 (Jense et al. 1991). This increased to 51 by 1991-92, but dropped to 33 fawns/100 does in 1992-93 (Evans et al. 1996). These low counts are reflective of the downward trend in deer populations for Utah's western desert areas.

Current population objectives for deer are to reach a target winter population of 4,000. More recently, only 2,500 deer were estimated in the post season counts of 1996. The herd composition is to be maintained with a post season buck to doe ratio of 15:100, with 30% of the bucks being 3 point or larger. Overall deer numbers on this unit are significantly below recent averages and greatly below historic highs and averages (Evans et al. 1996). Elk objectives are to achieve a population of 975 wintering animals with a minimum post season bull to cow ratio of 16:100. At least 8 of these bulls are to be 2 ½ years old or older. The bull harvest objective is to maintain a bull harvest of 90% to 100% mature bulls with an average age of at least 7-8 years.

Competition between feral horses, livestock, and big game for the herbaceous vegetation around seeps, springs, and creeks is a problem. Because the forbs and succulent grasses typical of the summer diet of mule deer and elk are scarce throughout the range, the limited riparian areas where they do occur are vital. Unfortunately, livestock and feral horses also prefer these areas and use them extensively. Feral horses are especially detrimental because of their tendency to trample vegetation and compact soils resulting in reduced forage production and erosion problems. Many of these riparian areas should be fenced to alleviate some of these problems. Chaining and seeding of closed juniper-pinyon stands at higher elevations would enhance the area for elk and could have limited benefits for deer.

Study Site Description

Because of unit 20's limitations as big game range, it had been given a low priority and only two permanent trend monitoring studies were established in 1985. These studies were both on DWR lands in the Indian Peak Wildlife Management area. Due to increasing competition with deer, elk, and wild horses, 3 additional trend studies were established in 1998 and one in 1999. These include Mountain Home Seeding, Upper Hamblin Valley, Wah Wah Pass, and South Spring. A discussion of each site's trends follows.

SUMMARY

WILDLIFE MANAGEMENT UNIT 20 - SOUTHWEST DESERT

Two trend study sites were established in unit 20 in 1985, Upper Indian Peak (20-1) and Lower Indian Peak (20-2). Three additional sites were established in 1998, Mountain Home Seeding (20-3), Upper Hamblin Valley (20-5) and Wah Wah Pass (20-6), to monitor increasing elk and wild horse populations. One additional site was established in 1999, South Spring (20-7). Some common characteristics that these sites share is that they all occur at elevations greater than 7,000 feet, with the exception of Lower Indian Peak (6,710 ft). These sites are used mainly as transition/summer ranges, with some winter use occurring during mild winters.

Deer use on the majority of the sampled sites has remain relatively low and fairly consistent at about 10 days use/acre (25 ddu/ha). On the other hand, elk use has been increasing from rather moderately low numbers averaging 23 elk days use/acre (57 days use/ha) to moderately high numbers averaging 49 elk days use/acre (121 edu/ha). Horse use was only noted on three sites; Mountain Home Seeding, Upper Hamblin Valley and Wah Wah Pass. From initial establishment to now, average use for these three sites has remained about the same at 22 days use/acre. Although, the Mountain Home Seeding has always had the most horse use with an on average use of about 52 days use/acre.

Trends for soils for all sites except two have gone down in 2003, especially at South Spring. The trend study at South Spring was part of a prescribed burn and the downward trend was caused by significant decreases in vegetative and litter cover with an increase in bare soil. The two sites that did not decrease are the two sites associated with curlleaf mountain mahogany which have stable soil trends but are in poor condition. Total grass cover for either site was at 1% or less, while forb cover was similarly very low except for Upper Hamblin Valley (20-5) where almost 75% of the forb cover was contributed by a low value forb, rock goldenrod.

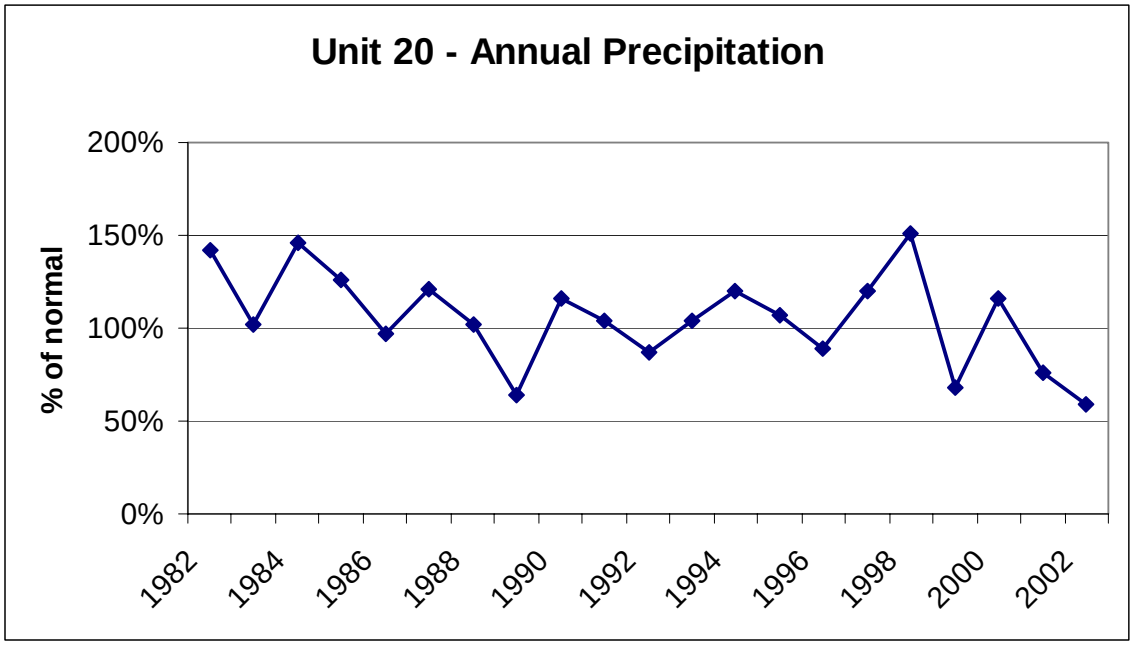
Browse trends were down at South Spring due to the prescribed burn eliminating sagebrush and bitterbrush from the site. The only other downward browse trend was found at Lower Indian Peak. The other 4 trend studies displayed stable or improving browse trends.

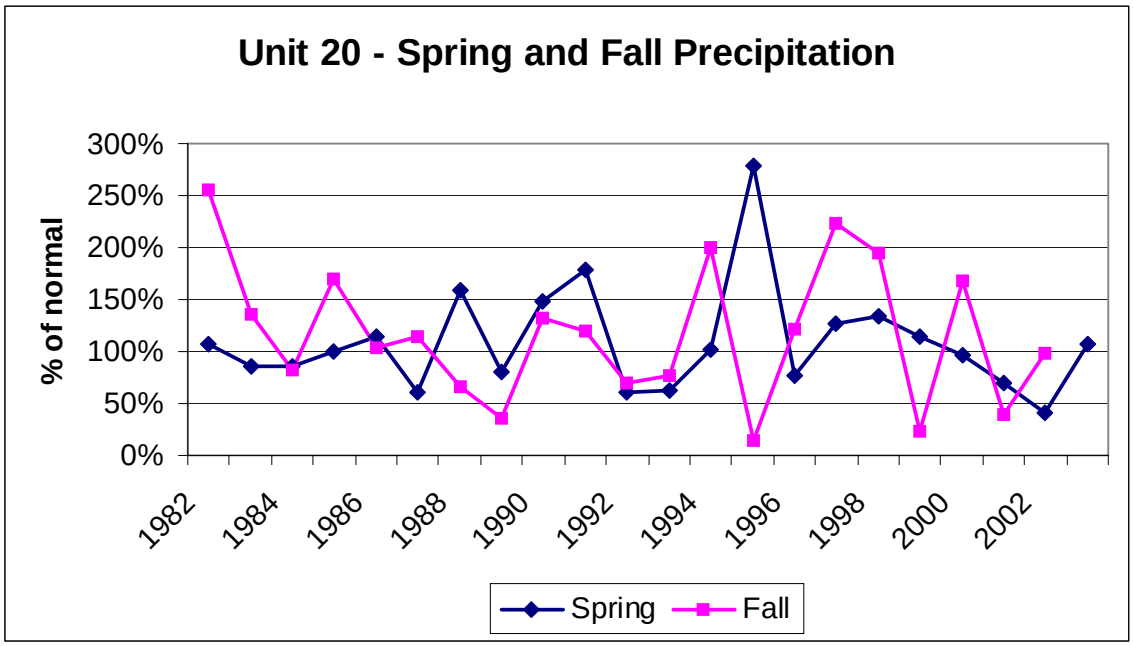
Herbaceous trends were down or slightly down at all sites due primarily to drought conditions which have effected this area for the past few years. Cover of perennial grasses declined at all 5 trend studies an average of 64%. Sum of nested frequency also declined at 3 sites, Lower Indian Peak, Mountain Home Seeding, and Upper Hamblin Valley. Cover and frequency declined at South Spring, but this was primarily due to the prescribed burn prior to the 2003 reading. An overall decline was also seed in perennial forb cover and frequency. Three trend studies, Upper Indian Peak, Upper Hamblin Valley, and Wah Wah Pass, contain significant amount of forbs in their respective herbaceous understories. Sum of nested frequency of perennial forbs declined on all sites an average of 34%. Average perennial forb cover declined by 55% at Upper Indian Peak and 62% at Wah Wah Pass but remained stable at Upper Hamblin Valley due to the dominance of the poor value rock goldenrod which remained stable in cover. Forbs are lacking at Lower Indian Peak and Mountain Home Seeding with cover values less than 1%. However, frequency and cover also declined at both sites.

The downward trends on this unit are primarily the result of drought which has effected much of the State for the past several years. Precipitation data from weather stations in and around unit 20, show very low annual precipitation in 1999, 2001, and 2002, averaging only 67.6% of normal (Utah climate summaries 2003). Conditions were exceptionally dry in 2002 when only about 59% of normal annual precipitation was recorded. Spring precipitation (April to June) was also well below normal in 2001 and 2002 at 70% and 40% of normal

respectively. This lack of spring precipitation greatly reduces grass and forb production and hinders shrub recruitment. Precipitation graphs and trends for each study site can be found below.

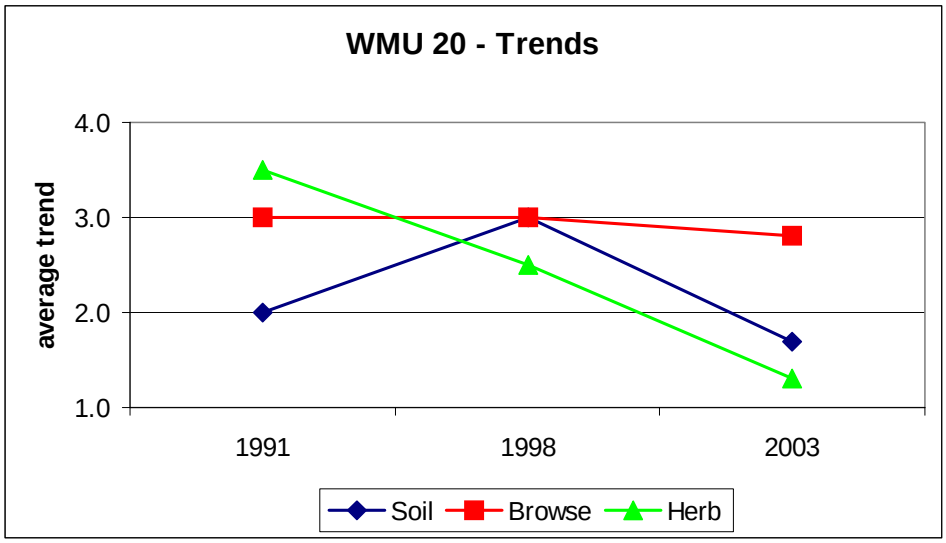
Below are precipitation graphs for the Southwest Desert unit. Data represents percent of normal precipitation averaged for 4 weather stations which include the following: Modena, Eskdale, Wah Wah Ranch, and Milford (Utah Climate Summaries 2003).





Average Trends – WMU 20 Southwest Desert

	1991	1998	2003
Soil	2.0	3.0	1.7
Browse	3.0	3.0	2.8
Herb	3.5	2.5	1.3
	2 sites	2 sites	6 sites



Trend Summary

	Category	1985	1991	1998	2003
20-1 Upper Indian Peak	soil	est	2	3	1
	browse	est	3	3	3
	herbaceous understory	est	4	3	1
20-2 Lower Indian Peak	soil	est	2	3	1
	browse	est	3	3	2
	herbaceous understory	est	3	2	1
20-3 Mountain Home Seeding	soil			est	1
	browse			est	3
	herbaceous understory			est	1
20-5 Upper Hamblin Valley	soil			est	3
	browse			est	4
	herbaceous understory			est	2
20-6 Wah Wah Pass	soil			est	3
	browse			est	4
	herbaceous understory			est	2
	Category			1999	2003
20-7 South Spring	soil			est	1
	browse			est	1
	herbaceous understory			est	1

(1) = down, (2), slightly down, (3) = stable, (4) = slightly up, (5) = up
(est) = established, (n/a) = no trend, (susp) = suspended, (NR) = not read